ABSTRACT

An online monitoring method and device for a fossil fuel converter apparatus. The method monitors fuel compositions in real time by measuring operating data of the converter apparatus and comprises the following steps: determining reactant compositions and number of variables thereof; determining fuel compositions and number of variables thereof; determining compositions of incomplete products and number of variables thereof; determining relationship between the fuel compositions and calorific value; establishing an equation set involving the fuel compositions, the reactant compositions and the resultants compositions, according to energy balance relationship and material balance relationship in the combustion process; providing given conditions for independent relationships concerning variables in the above equation set; measuring boiler operating data and assigning the variables in the above equation set; and finding the solution to the equation set and obtaining real-time monitoring data of the converter apparatus.